pirical formula is $C_{44}H_{90}NPO_9 + H_2O$. This substance, by decomposition, yields *glycerin-phosphoric acid.* The compound termed *neurine* (a term formerly employed to designate what was supposed to be the special material of nerve matter) is now procured as a distinct body, by the decomposition of protagon. It is a syrupy substance, alkaline in its reaction, soluble in alcohol and ether. It contains no phosphorus.

The non-phosphorized group also comprises *cerebrin*, a nitrogenized body, whose composition is not yet absolutely established; also the non-nitrogenized compound *cholesterin*, which exists in considerable amount in nervous tissues, especially in the white substance. The extractives of the brain consist of the same bodies as are found in muscle, viz., creatine, xanthine, hypoxanthine, inosit, and lactic acid, "with leucine, uric acid, and probably urea." As is well known, the proportion of *water* in the brain varies according to age, being much greater in infancy; it also differs in the white and gray matter, being considerably larger in the latter.

The importance of a full supply of oxygen to the cells of the gray matter, to enable the nerve-centres to maintain their functional activity, is witnessed by the effect produced upon the respiratory centre in the medulla, by the circulation of blood deficient in oxygen. The same is true of the mental operations; the moment the supply of oxygenated blood is cut off from the brain by compression of the large arteries, as in strangulation, all mental acts cease. It is well known that unconsciousness supervenes, in hanging and strangling, some time before life ceases.

In connection with the nervous tissues, the author discusses the "chemical history of the peripheral terminations of the nervous system, particularly those of the eye." Although this is a subject of profound interest to the student, and one offering a very tempting field for discussion, we are now compelled, reluctantly, to pass it over.

From our careful, though at times necessarily cursory, analysis of Dr. Gamgee's new work, our readers will readily conclude that we have a high appreciation of it. It is written in a very pleasing, unpretentious style, which we deem a great merit in a scientific book. It may be considered as the most reliable modern authority in Physological Chemistry. We shall hail with much pleasure the advent of the second volume.

J. J. R.

---

## ART. XXIV.—*Health Reports.*

1. *First Annual Report of the State Board of Health, Lunacy, and Charity of Massachusetts*, 1879. *Supplement containing Report and Papers on Public Health.* 8vo. pp. 277. Boston, 1880.
2. *Circular No.* 3, *of the Board of Health of the State of Alabama.* 8vo. pp. 206. Montgomery, May 1, 1880.
3. *Report on Yellow Fever in the U. S. S. Plymouth in* 1878–9. Prepared under the direction of PHILIP S. WALES, Surgeon-General U. S. Navy. 8vo. pp. 85. Washington, 1880.

1. THE successor to the valuable series of Reports of the Health Board of Massachusetts fully sustains their wide-spread reputation, and contributes numerous important facts and deductions to the general fund of knowledge held in common by sanitary scientists. Several contributions, such as that of the Secretary "On the Westfield River Basin," the admirable paper

of Prof. Edward S. Wood, of Harvard, upon the "Water Supply of Cambridge," and the excellent "Observations on Fresh Pond" and on "Mystic Water," by Prof. Wm. Ripley Nichols, whilst extremely useful to the inhabitants of these localities, possess chiefly a local interest, except as they furnish examples of the thorough investigation into the condition of the water supplies, sewerage, drainage, etc., which should be promptly instituted by every community for its own protection and advantage.

The second article in this volume, *Trichina in Relation to the Public Health*, by T. S. BILLINGS, M.V. (Royal Vet. Inst. Berlin) of Roxbury, contains one of the clearest and most comprehensive accounts of this parasite with which we are acquainted. During Mr. Billings's observations, which extended over a period of five months, in an examination of those portions of the body most liable to be infected, *i. e.*, the pillars of the diaphragm in 2701 hogs slaughtered near Boston, 154 were found to be infected, or 5.7 per cent. Investigation in regard to the rats caught in one pork packing establishment near Boston, showed that out of 40 examined no one was exempt from trichina, but in other instances the proportion was much smaller, and our author considers the theory that swine often become trichinosed by eating infected rats, as by no means proved. No successful remedy for trichiniasis is suggested, and the problem of definitely connecting calcified trichina in the human organism, with symptoms resembling those of some chronic disease such as rheumatism, remains unsolved, although we feel confident that a world-wide reputation awaits the discoverer of its solution.

MRS. ELLEN H. RICHARDS, Instructor of Chemistry, Woman's Laboratory, Massachusetts Institute of Technology, Boston, contributes an essay on the *Adulterations of some Staple Groceries*, which displays a large amount of patient and laborious research. She found sugars were rarely adulterated, and bicarbonate of soda was of good quality in a majority of instances, but that cream of tartar was largely sophisticated with ground gypsum, and baking powders with starch.

Prof. W. G. FARLOW'S paper on *Some Impurities of Drinking Water caused by Vegetable Growths* is probably the most valuable one in this volume, dealing as it does with a subject upon which there is much popular misapprehension and professional ignorance. Many curious characteristics of these low forms of vegetable life highly interesting to both microscopists and sanitarians are described, and the important practical lesson inculcated that whilst the green plants are, as a rule, quite harmless, many of the phycochromacæ or bluish-green algæ, may be highly injurious. The excessive growth of *cœlosphærium* and *clathrocystis*, which are fully described and figured by our author, give rise to the so-called pig-pen odour, and soon render the affected water too offensive to drink; but how far minor degrees of development of these *Nostocs* are prejudicial to health is yet undetermined.

An excellent article on the *Drainage of Summer Hotels and Country Boarding Houses*, by ERNEST W. BOWDITCH, Engineer, of Boston, gives the results of investigations into the sanitary condition of one hundred and fifty of these "health resorts," which were found to be almost without exception unsatisfactory, and liable to become at any time breeding places for epidemics of typhoid fever, diphtheria, and other infectious diseases. We trust that the day is not far distant when every proprietor of a summer hotel or boarding house will be compelled at least by popular opinion, if not by law, to maintain his premises in such a state of perfection in regard to drainage, sewerage, and water supply, as to receive a certificate of safety in these respects from some recognized sanitary authority, eminent enough to stand above the suspicion of fear or favour in his award, before the desired patronage of his hostlery can be obtained from an enlightened public.

2. Circular No. 3 of the Alabama Board of Health contains the Annual Report for 1879 of the Board of Censors and Committee of Public Health. The Mind and How to Preserve it, by Dr. Peter Bryce; Drainage and Under-drainage in their Sanitary and Economic Aspects, by Dr. S. D. Seelye; and the Theory and Practice of Quarantine, by Dr. Jerome Cochran. Of these papers, the first and last chiefly demand our attention.

As most of our readers are probably aware, the plan for organized sanitary effort in Alabama differs from that of other States in the Union, the rest having all adopted the general features of the Massachusetts Board of Health, which was established in 1867, and followed first by California in 1870. By this system, which it is claimed is better adapted to a sparsely settled country like that of Alabama, the State Medical Association is made the State Board of Health with a general supervision over the County Medical Societies, which are constituted the County Health Boards. Among other subjects which have occupied this important Committee of the State Society is a well-planned scheme for obtaining accurate statistics of Births, Deaths, and Diseases throughout the State, which if the cordial co-operation of the physicians practising within its borders can be secured, will do much towards accomplishing this desirable object. The grand principle of systematic effort for exclusion of contagious diseases by rigorous quarantine is asserted, in the excellent body of rules for the isolation and disinfection of persons, goods, railroad cars and passengers promulgated in regard to yellow-fever, but we regret to find the influence of the Alabama Medical Society arrayed against the extension of the powers of our National Board of Health, the services of which have been so eminent and crowned with such remarkable success that they deserve the unquestioning endorsement of every one, and above all of the people of the Gulf States. Quarantine is of necessity a troublesome, vexatious, and costly interference with freedom of travel and commerce, enforced by the *many* for their own protection, and in flagrant violation of the rights of the unfortunate few, and the most cherished *personal rights* or *State rights* should, on occasions of imminent danger from epidemics, be sacrificed willingly for the benefit of the community at large; that benefit to be most fully secured (according to the universal experience of mankind in the conduct of governments of armies, of fleets, etc.) by the action of a single, but well-advised, central executive officer. Just as the family is a type of the State, an individual is the type of the family, and we need scarcely remind such skilled physicians as the gentlemen composing this Alabama committee what distressing disturbances of the human organism ensue when during chorea the separate members of the body attempt to maintain their individual rights and assert their independence of the central organ of the will.

The concluding essay in this volume is an able and exhaustive paper upon *The Theory and Practice of Quarantine*, by Dr. Jerome Cochran, whose ardent devotion to the investigation of yellow fever during the epidemic of 1878 almost cost the profession his valued life. Under the various heads of disinfection of ships, cargoes, passengers, and crews, railroad, inter-state, intra-state, and municipal quarantines, etc., Dr. Cochran discusses the whole subject of prophylaxis against yellow fever, with the master hand of one whose life has been spent in thoughtful study of the dangers he seeks to avert from his fellow citizens.

3. The report on yellow fever in the U. S. ship Plymouth is a most timely and useful extract from the report of the Surgeon-General of the Navy, and we are glad to have official facts in regard to this remarkable case of the re-development of yellow fever poison (from some *materies morbi* which apparently survived the severe cold of a Boston winter), preserved in permanent and accessible form.

In his instructions to Dr. Richard C. Dean, Medical Inspector U. S. N., President of the Board having charge of the investigation, directions are given specially to ascertain "whether the second appearance of the disease in March, 1879, was due to the continued action of the original infection supposed to have been received in November, 1878," also to inquire minutely into all the circumstances "attending the exposure of the ship and her stores, clothing, coal, and other contents to a freezing temperature at the Navy Yard in Boston during the interval between the two occasions on which the disease was developed on board."

In regard to the former of these questions, it appears that after visiting St. Thomas and Santa Cruz in October, 1878, yellow fever broke out on board the ship, affecting in all seven persons. The vessel was promptly headed northward, reached Portsmouth, N. H., Nov. 30, and was "broken out" at Boston Navy Yard December 17. Nothing movable in the way of stores, provisions, and clothing was left in the ship; the crew was transferred, and the vessel fully exposed to cold. On Jan. 26, fifty pounds of sulphur were burned below decks, the temperature being below zero outside, and water freezing in every part of the ship. On Feb. 2, she was again fumigated, and on the 4th, having been whitewashed with a mixture of lime and chloride of lime, was believed to be thoroughly frozen out and purified. On the 15th of March, the Plymouth sailed for a cruise to the Windward Islands, and six and seven days later, *before approaching any land,* two cases of yellow fever occurred, one proving fatal. Hence it appears that the yellow fever poison had remained in the ship from the previous autumn, and survived the prolonged exposure to cold in a New England winter, besides the numerous fumigations which had been practised.

In regard to the second important point to be investigated, we find stated on p. 24:—

> "Whether the sulphurous acid vapour penetrated to every recess of the ship is doubtful. . . . . The examination of the ship already described, opened up many parts which must have been effectually protected against the freezing temperature recorded. So that if it be granted that the yellow fever poison was actually imported into the Plymouth, and that it (the poison) is endowed with the power of lying dormant under conditions unfavourable to its development without losing its potential vitality, we are of the opinion that the precautionary measures adopted in the Plymouth, energetic and well intentioned as they were, were not sufficient to insure the destruction of the cause of the disease."

The volume is enriched with a map showing the geographical habitat of yellow fever; with plans exhibiting the internal arrangement of the Plymouth, and with interesting copies of photographs depicting the rod-like (crystalline?) bodies found by the Havana Commission, to be deposited from the air of a military hospital in Havana, and of similar crystals obtained in Washington, also of photographs of the fungus producing dry rot in timbers of ships, and especially abundant in the Plymouth where it was strongly suspected of preparing hiding-places for the disease germs.

Altogether the book is an admirable and successful effort to utilize for the best advantage of sanitary science, a curious *natural* experiment upon the power of yellow fever poison to renew its activity after exposure to the vaunted disinfecting agency of extreme cold for several months.

J. G. R.

---

ART. XXV.—*Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects.* Vol. I. 4to. pp. vi., 126, 888. Washington: Government Printing Office, 1880.

WHEN the War of the Rebellion was being waged, and the magnitude of the issues at stake, with the importance of the results depending upon it were gradually becoming appreciated, it was truly said, that the contest must tend to develop our national life, and to enfranchise us from the dominion of European criticism and opinion. One of these results, evolved from the tears and sorrows of that sad event, is brought before us in the right royal volume whose name is placed at the head of this article, which takes its place with equal step alongside the *Medical and Surgical History of the War*, and like the other publication of the Surgeon-General's Office proves that in the subject of Medical Literature, America may justly claim to have attained a national development, and to stand in the front rank. A catalogue, like the generalizations which follow upon observed facts in science, marks a later growth and a more mature development in the world of letters, and is looked upon with special interest on this account by literary men. American scholars will therefore anxiously scan this book, and regarding it with tender and proper pride, will congratulate themselves upon the progress of which it is a monument.

Yet this handsome volume of over one thousand pages, is but the beginning of the great work undertaken by Dr. Billings, which even when finished will be but a contribution to Medical Bibliography. A very important contribution indeed, as a catalogue of a large collection of books, yet, as the author of the work points out, it is but one collection, and, that by no means a complete one. When it is remembered that this catalogue must stretch through twelve or fifteen quarto volumes before its completion, it would appear difficult to decide which is most to be wondered at, the marvellous extent of medical science, the prolific ability of medical writers, or the energetic enterprise of the individual who has undertaken the great work of compiling the catalogue.

The volume comprises a brief but most important introduction describing the aim and scope of the work; a list of miscellaneous abbreviations; a list of abbreviated titles of medical periodicals, which alone occupies one hundred and twenty-six pages; and eight hundred and eighty-eight pages of catalogue proper.

As was foreshadowed in the "specimen fasciculus" issued in 1876, the titles of authors and subjects have been arranged in a single alphabet, it having been found that such an arrangement would be most useful to physicians, though for the use of librarians alone, a separation into two classes might have been preferable.